Reviewer's report

Title: Risk factor analysis and spatiotemporal CART model of cryptosporidiosis in Queensland, Australia

Version: 2 Date: 15 May 2010

Reviewer: HAI-WEI WU

Reviewer's report:

Major Compulsory Revisions:
1) In the 3 CART models described in Materials and Methods session, the “factor (season) is a predictor, but, there is no explanation of how this season factor is used in the models. Also, on Pag16, it is stated “In this study, only the SEIFA, temperature and rainfall were considered.” Do it mean season factor were not included in any of the CART model? It seems to me the paragraph about decompose of cryptosporidiosis incidence by 4 seasons is the method used to generate Fig2A and Fig2B, so this method should NOT be included under the CART models.

Minor Essential Revisions
2) Abstract: Last sentence in the paragraph of “methods”: it should be: a prediction map for the cryptosporidiosis outbreak was made according to the outputs of CART3 model”
3) Page3, first paragraph in BACKGROUND, the newly added sentences about the risk factors of human cryptosporidiosis do not read well and is redundant, suggest to make modifications.
4) Page4, The aims of this paper are…., , should add “by LGAs” after “factors”, since all the data used is at LGA but not individual level.
5) Page5, last sentence before “data collection” should be: “LGA are …..because of the availability in many datasets. “
6) Page5, The newly added sentence in “Data Collection”, please clarify the expression “each LGA had each observation”, do the authors mean, each LGA has a unique observation?
7) The next sentence in “data collection”, is “monthly precipitation” recorded as “rainfall (mm)” in the analysis?please clarify.
8) Page6, first sentence in “spatial empirical Bayes rates smoothing, should be to “compute”
9) Page12, under CART3 model, 100% chance for an outbreak….., or the SEIFA was get between 892 and 933…” should be “….933 and 941…” according to Fig6.
10) Page14, first paragraph, last sentence, “Our precious research…”should be “Our previous research..”– plz carefully read newly added paragraphs on Page14 and 15, and make language correction accordingly
11) Figure legend, for Figure7, please clarify what are the arrows on the figure for.

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

Major Compulsory Revisions:
1) In the 3 CART models described in Materials and Methods session, the “factor (season) is a predictor, but, there is no explanation of how this season factor is used in the models. Also, on Pag16, it is sated “In this study, only the SEIFA, temperature and rainfall were considered.” Do it mean season factor were not included in any of the CART model? It seems to me the paragraph about decompose of cryptosporidiosis incidence by 4 seasons is the method used to generate Fig2A and Fig2B, so this method should NOT be included under the CART models.

Minor Essential Revisions
2) Abstract: Last sentence in the paragraph of “methods”: it should be: a prediction map for the cryptosporidiosis outbreak was made according to the outputs of CART3 model
3) Page3, first paragraph in BACKGROUND, the newly added sentences about the risk factors of human cryptosporidiosis do not read well and is redundant, suggest to make modifications.
4) Page4, The aims of this paper are…., should add “by LGAs” after “factors”, since all the data used is at LGA but not individual level.
5) Page5, last sentence before “data collection” should be: “LGA are…..because of the availability in many datasets. “
6) Page5, The newly added sentence in “Data Collection”, please clarify the expression “each LGA had each observation”, do the authors mean, each LGA has a unique observation?
7) The next sentence in “data collection”, is “monthly precipitation” recorded as “rainfall (mm)” in the analysis?please clarify.
8) Page6, first sentence in “spatial empirical Bayes rates smoothing, should be to “compute”
9) Page12, under CART3 model, 100% chance for an outbreak….., or the SEIFA was getween 892 and 933…” should be “…..933 and 941…” according to Fig6.
10) Page14, first paragraph, last sentence, “Our precious research…”should be “
Our previous research..”? – plz carefully read newly added paragraphs on Page14 and 15, and make language correction accordingly

11) Figure legend, for Figure7, please clarify what are the arrows on the figure for.